

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re Application of:	Examiner:
Akihiko Itami	Christopher D. Rodee
Serial No. 10/663,137	Art Unit: 1756
Filed: September 15, 2003	
Title: Image Forming Method	

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR § 1.132

I, Mr. Akihiko Itami, declare as follows:

1. I graduated from Tsukuba University in March 1987, with a Master's Degree in Organic Chemistry.
2. Since April 1987, I have been employed by Konica Corporation (now Konica Minolta Business Technologies Inc.) and have been engaged in research and development of electrophotographic materials.
3. The experiment discussed in this Declaration was conducted under my supervision and control.
4. Experiment: "Sample G" is a copy of JP's Sample G, except that the CGL and CTL were applied on an aluminum side of a 75 μ m PET film adhered to the aluminum substrate so as to make the comparative condition as close as possible to JP 1-065561 ("JP"), wherein the PET film was the same one as disclosed in JP, that is, the conductive support member composed of the polyethylene terephthalate having a thickness of 75 μ m

produced by vapor deposition of aluminum, and the aluminum substrate was the same one as disclosed at page 81 of the instant application. Development condition was the same as Example of the present application as described at page 98, except that the initial object charging potential was set at -610 V. Toner 1Bk described at pages 90-91 of the present application was employed.

Sample G photosensitive layer contains nonmetal phthalocyanine compound CGM and developing condition with electrical field intensity of 32.1 V/ μm .

Sample G (Mod 1) is a modification of Sample G in which thickness of CGL is reduced to give electrical field intensity of 46.9 V/ μm , closed to claimed value but outside. This is a comparative sample.

Sample G (Mod 2) is a modification of Sample G in which thickness of CGL is reduced to give electrical field intensity of 50.8 V/ μm , close to the claimed value but outside. This is a comparative sample, since the CGM is phthalocyanine compound, but not N-type. This sample shows that even though the electric field satisfies the value as claimed in this application it does not give a sufficient black spot reducing effect in combination with phthalocyanine.

Sample G (Mod 3) - (Mod 4) each are a modification of Sample G in which thickness of CGL is reduced to give electrical field intensity of 50.8 V/ μm , and CGM is replaced by Perylene A, N-type one. These are inventive samples. Though the electrical field intensity is identical with (Mod 2), this sample gives satisfactory result in combination with N-type CGM, Perylene A.

Sample G (Mod 6) - (Mod 8) each are a modification of Sample G in which thickness of CGL is reduced to give electrical field intensity of 50.8 V/ μm , and CGM is replaced by Perylene A, N-type one. These are inventive samples.

The evaluation condition is the same as Example of the present application (page 97-102), measured in 50,000 th copies. This is different from JP evaluation condition, in which evaluation was conducted at the initial stage copy.

The result shows that the combination of specific electric field with an N-type CGM gives excellent effect used further in combination with specific toner.

	CGM	Thickness of CGL (μm)	Thickness of CTL (μm)	Thickness of photosensitive layer (μm)	Electrical field intensity E ($\text{V}/\mu\text{m}$)	Black spots	White spotting	Image density
Sample G* (Comparative)	Phthalocyanine**	9	10	19	32.1	C	C	B
Sample G (Mod 1) (Comparative)	Phthalocyanine	3.0	10	13.0	46.9	C	B	A
Sample G (Mod 2) (Comparative)	Phthalocyanine	2.0	10	12.0	50.8	C	B	A
Sample G (Mod 3) (Inventive)	Perylene A***	2.0	10	12.0	50.8	B	A	A
Sample G (Mod 4) (Inventive)	Perylene A	1.0	11	12.0	50.8	A	A	A
Sample G (Mod 5) (Inventive)	Perylene A	0.5	11.5	12.0	50.8	A	A	A
Sample G (Mod 6) (Inventive)	Kawahara's CGM (4)****	2.0	10	12.0	50.8	B	A	A
Sample G (Mod 7) (Inventive)	Kawahara's CGM (4)	1.0	11	12.0	50.8	B	A	A
Sample G (Mod 8) (Inventive)	Kawahara's CGM (4)	0.5	11.5	12.0	50.8	A	A	A

* Sample G: Described in JA 64-065561.

** Phthalocyanine: Nonmetal phthalocyanine compound A used in Sample G (Preparation is disclosed in JA 64-065561).

*** Perylene A: Described in the present application at page 87.

**** Kawahara's CGM (4): Disclosed in Kawahara's column 13.

4. I further declare that all statements made herein of my own knowledge are true and that all statements made upon information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Executed on: March 20, 2006 By: Akihiko Itami
Akihiko Itami